

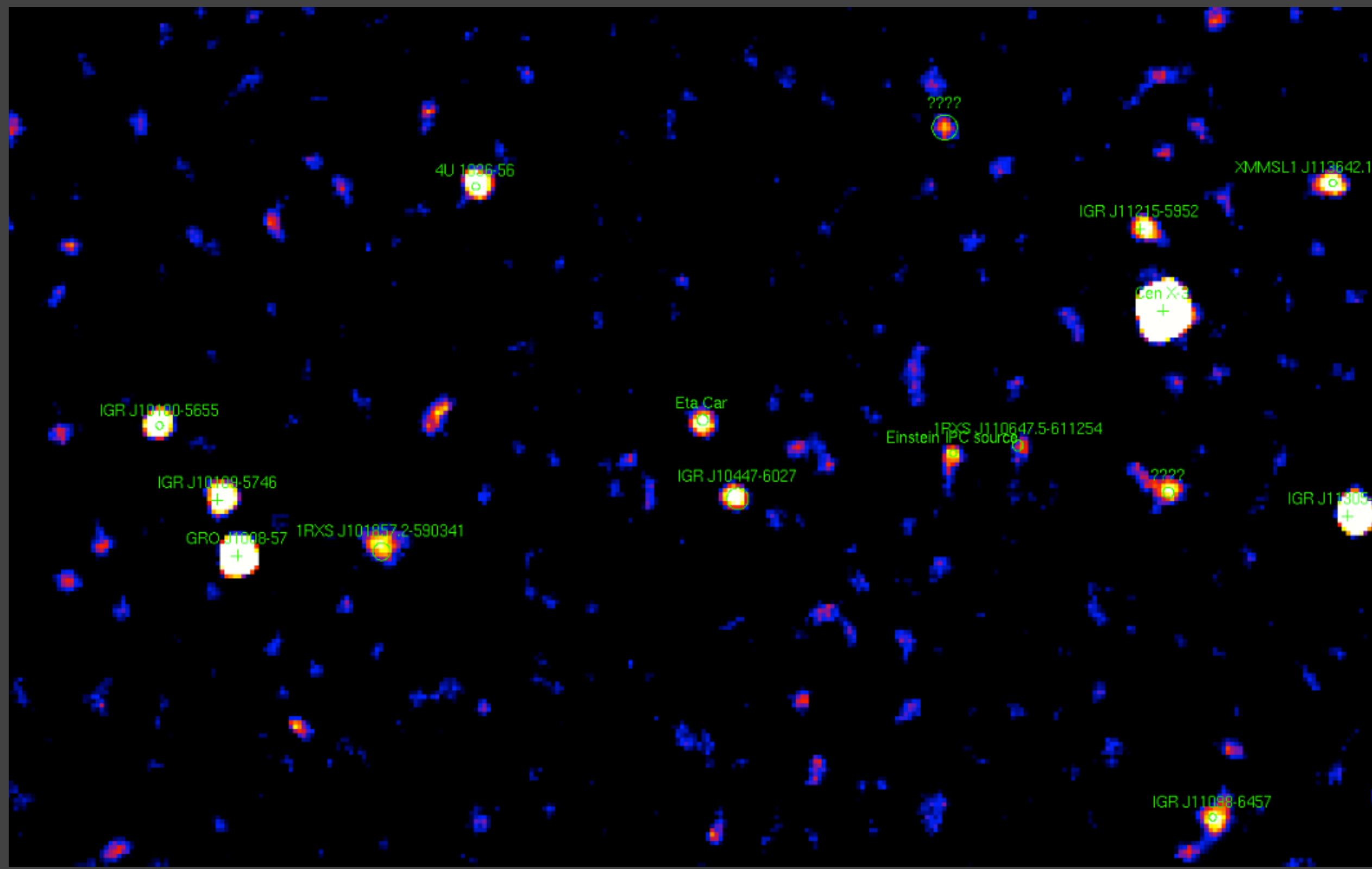
INTEGRAL observations of η Carinae

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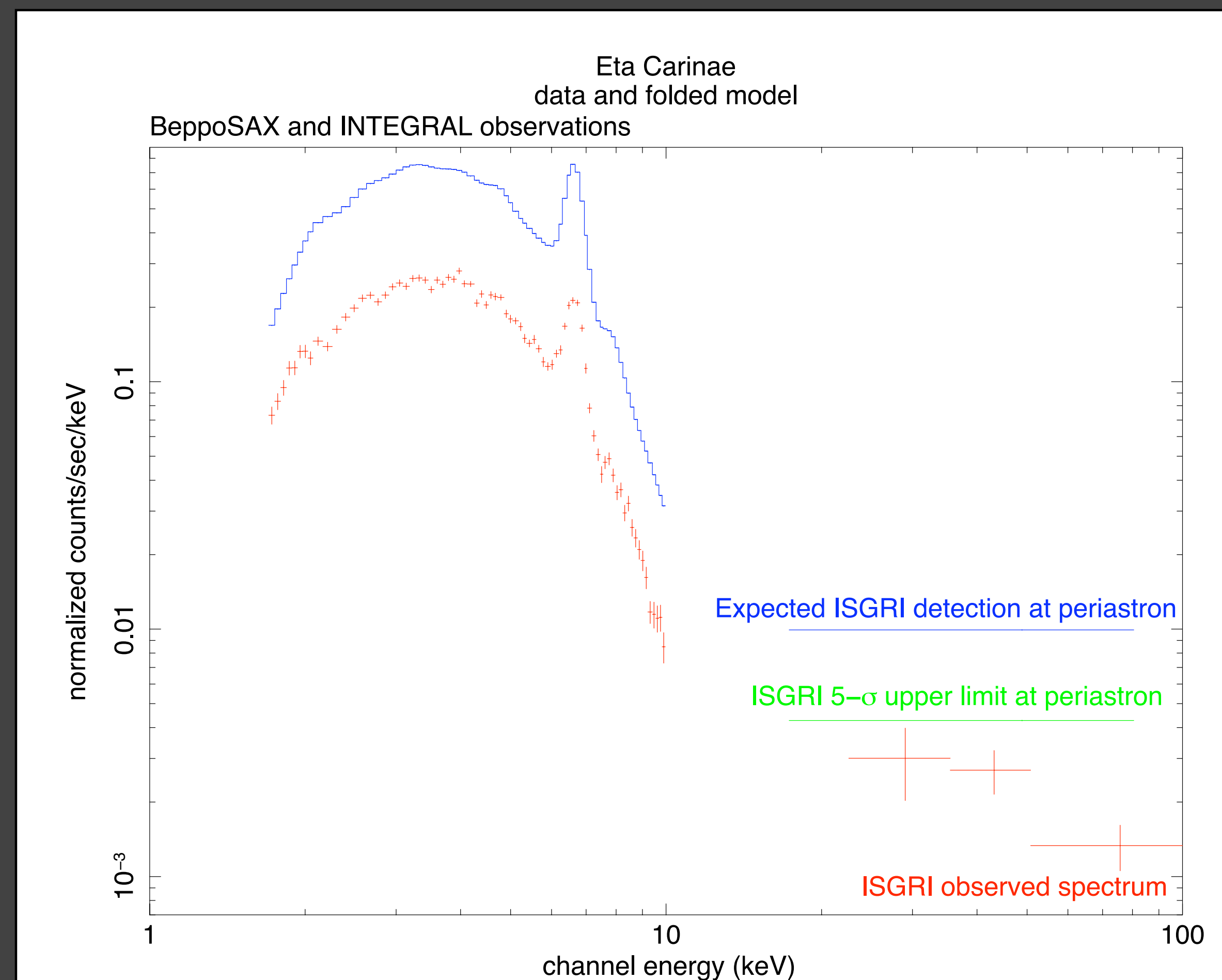
Outside periastron



INTEGRAL/ISGRI mosaic image of Eta Car outside periastron: the source is well detected (significance level around 7).

Detection of Eta Car : Observations performed with INTEGRAL/ISGRI allowed for the first time to resolve the hard X-ray emission of Eta Car (seen up to 100 keV) from the nearby source IGR J10447-6027 [Leyder+08].

Emission mechanism : Assuming that Eta Car is a colliding-wind binary [e.g. Ishibashi+99], its hard X-ray emission is likely due to inverse Compton scattering of low-frequency photons by high-energy electrons accelerated in the wind-collision region [Benaglia+03].

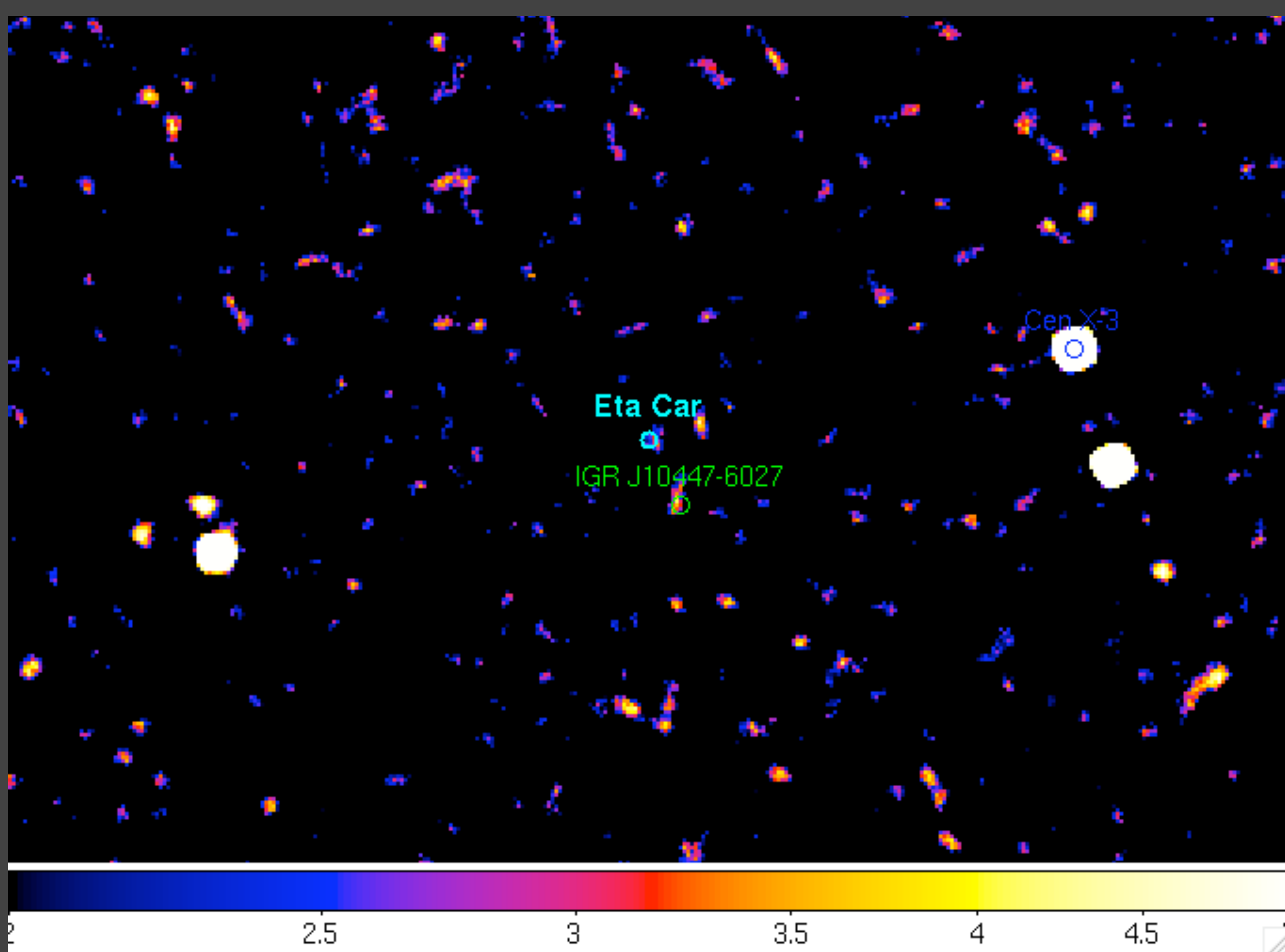


- **Red:** observed spectrum of Eta Car outside periastron
- **Blue:** spectrum scaled for periastron (blue), assuming an unabsorbed flux as simulated by [Parkin+09]
- **Green:** INTEGRAL/ISGRI 5-sigma upper-limit at periastron

The effect of the absorption column density expected during the new observations at periastron ($N_H \sim$ a few 10^{23} cm^{-2}) is negligible at hard X-rays.

Periastron observations : INTEGRAL observed Eta Car during 1 Ms close to periastron, to study the hard X-ray emission during the X-ray minimum.

Results : The fraction of non-thermal particles is lower at periastron passage than outside. This can be expected because of the stronger cooling.



**INTEGRAL/ISGRI mosaic image of Eta Car at periastron:
only an upper-limit can be derived.**

References

- Benaglia & Romero 2003, A&A 399, 1121
- Ishibashi et al. 1999, ApJ 524, 983
- Leyder, Walter et al. 2008, A&A 477, L29
- Parkin et al. 2009, MNRAS 394, 1758